



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/821,588	04/09/2004	William K. Leonard	55476US041	1883
32692	7590	10/13/2006	EXAMINER	
3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427			EDWARDS, LAURA ESTELLE	
			ART UNIT	PAPER NUMBER

1734

DATE MAILED: 10/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/821,588

Applicant(s)

LEONARD ET AL.

Examiner

Laura Edwards

Art Unit

1734

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 2 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Schlunke et al (US 4,924,772).

Schlunke et al teach a calendar substrate treatment station comprising a train of three or more pick-and-place devices or pivotable rolls (4-8) of different sizes that contact a moving substrate and smooth (i.e., calendar) the substrate at various positions on the substrate whose lengths along the substrate with respect to the first position are not the same or integer multiples of one another. The intended use of the station with a wet coating applied to the substrate has been given no patentable weight because no coating device has been positively claimed.

With respect to claim 2, guide rolls (18-20) that form part of the pick-and-place devices can be idle such that they would be capable of rotating in the direction of travel of the moving substrate.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

Art Unit: 1734

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cheatham (US 2,053,601) in view of Gilman (US 1,583,788).

Cheatham teaches a smoothing station for improving uniformity of a wet coating on a substrate having a direction of travel or motion comprising a train of three or more reciprocating pick and place devices (15-20) that rotate in the direction of travel or motion (see pg. 4, lines 3-9 and lines 21-29), the peripheral surfaces of the pick and place devices being at different positions along the substrate, all said positions not being the same (pg. 4, lines 41-51). Cheatham is silent concerning the pick and place devices contacting and recontacting the substrate while smoothing so as to effect different lengths of contact along the coating to improve uniformity of the coating. However, it would have been obvious to one of ordinary skill in the art that the Cheatham smoothing station would enable variations in lengths of contacting and recontacting along the substrate because the smoothing rollers (i.e., pick or place devices) can be driven at different speeds relative to the speed of travel of the web as evidenced by pg 4, lines 22-30. One skilled in the art would recognize and appreciate that different lengths of contacting/recontacting of the

Art Unit: 1734

coated substrate would be effected via variation in speed of rotation of the smoothing rollers and/or variation in speed of travel of the web or substrate. In addition, while Cheatham does not explicitly teach or suggest the rollers or pick and place devices being of different sizes, Cheatham does establish that the rollers can be made in any known fashion so as to include different surfacing material (see col. 4, lines 52-67). Also, it was also known in the art at the time the invention was made, to provide in a smoothing station, rollers of different sizes as well as of different surface materials as evidenced by Gilman (col. 1, lines 52 to lines 68). In light of the teachings of Gilman, one of ordinary skill in the art would appreciate that the sizes and/or diameters of the rollers or pick and place devices would be subject to change so as to be different. The determination of the appropriate size(s) and/or diameter(s) of the rollers due to their material construction (i.e., including felt, cloth, rubber, etc.) to facilitate smoothing of the coating would be within the purview of one skilled in the art.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hall (GB1278099) in view of Gilman (US 1,583,788).

Hall teaches an apparatus for improving longitudinal uniformity of a liquid coating on a substrate comprising the combination of at least three or more pick-and-place devices (3; col. 1, lines 41- 46) that rotationally move counter to the direction of travel of the substrate, the pick and place devices periodically contacting the coating and re-contact said coating along lengths of the substrate, the pick and place travel at different positions including the direction of travel of the substrate (see Fig. 3) or the axial direction (see Fig. 4) wherein the pick-and-place devices are out of phase with one another (see claim 5) constituting non-periodically related devices. Hall

Art Unit: 1734

fails to teach or suggest 1) different lengths or distances along which the pick-and-place devices contact and recontact the coating on the substrate, and 2) the rollers or pick and place devices being of different sizes. Even though Hall does not explicitly teach different lengths or distances along which the pick-and-place devices contact and recontact the coating on the substrate, one of ordinary skill in the art would expect that the contacting distances or lengths would be different because the devices are translated or moved into/out of phase with one another such that the devices are not periodically related along the direction of travel of the substrate. Moreover, the apparatus of Hall can be adjusted such that the amplitude and frequency of the reciprocating motion of the smoothing rollers/pick and place devices can be varied widely with a reduced amplitude and an increased frequency (see col. 3, lines 19-34) such that a variety of lengths of contacting/recontacting of the coating can result along the coated substrate. As for different sized rollers, it was also known in the art at the time the invention was made, to provide in a smoothing station, rollers of different sizes as well as of different surface materials as evidenced by Gilman (col. 1, lines 52 to lines 68). In light of the teachings of Gilman, one of ordinary skill in the art would appreciate that the sizes and/or diameters of the rollers or pick and place devices of Hall would be subject to change so as to be different.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hall (GB1278099) in view of Gilman (US 1,583,788) as applied to claim 1 above, and further in view of Cheatham (US 2,053,601).

The teachings of Hall and Gilman have been mentioned above but neither teach or suggest the pick and place devices rotating in a direction of travel of the substrate. However, it

Art Unit: 1734

was known in the coating art, at the time the invention was made, to configure reciprocating smoothing rollers to rotate optionally in the direction of rotation of the substrate or the opposite direction as evidenced by Cheatham (see col. 4, lines 3-9 and 22- 29). In light of the teachings of Cheatham, it would have been obvious to one of ordinary skill in the art to arrange the smoothing rollers or pick and place devices in the apparatus as defined by the combination above to rotate in the direction of substrate motion as another option in order to create different surface conditions along the length of the coated substrate so to enhance smoothing of the applied coating.

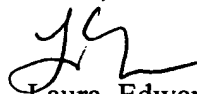
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura Edwards whose telephone number is (571) 272-1227. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Fiorilla can be reached on (571) 272-1187. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1734

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Laura Edwards  
Primary Examiner  
Art Unit 1734

Le  
October 11, 2006